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INTEROFFICE CORRESPONDENCE

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SEBASTIAN DEGENS

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SUBJECT: BERTHS 501 AND 502 SHOALING
2000D034 / 52348-100

The purpose of this memo is to report the results of the Geotechnical / Hydraulics study of erosion and shoaling at Berth 501 which was subsequently found to be occurring also at Berth 502.

History

The question had been raised as to whether there was a connection between the potentially unstable bank at Berth 501 and the sedimentation or infill of the barge-slip (either through "bank erosion causing increased sedimentation" or "dredging at barge-slip causing increased bank erosion"). A related question raised was whether future deepening of the berth would increase bank instability. *GRI geo-technical consultants* in combination with *Ogden Beeman/Parsons Brinckerhoff* were hired to investigate these issues and report on their findings.

Conclusions of the study are:

- Dredging at Berth 501 has not contributed to riverbank erosion.
- Erosion of the local riverbank has not contributed significant amounts of sediments to be dredged at Berth 501.
- Deepening of the berth to -45 ft will not pose problems to the stability of the submerged slope, nor will it increase erosion of the riverbank.
- The spit at Berth 501 is a so-called "tombolo", caused by the wave-shadow resulting from the berth structures and the ever-present barges shielding that part of the bank from wave action that would normally keep sediments in suspension and moving downriver.

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Recommendations / follow-up

- Since it appears there is no significant connection between local processes of bank erosion, dredging and sedimentation, dredging of Berth 501 and barge slip can be performed as needed.
- The existence of a tombolo is a phenomenon that occurs at several berths of the Port and most clearly at Berth 501 and 502. Since these tombolos could impact dredging needs, the Port should consider measures to control the growth of tombolos as part of the overall approach (dredging program) to maintain the required depth at its berths.

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